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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,738	09/29/2003	Masahiro Ishiyama	03180.0335	6750
22852 7590 08/22/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER ALI, FARHAD	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/671,738	<b>Applicant(s)</b> ISHIYAMA ET AL.	
	<b>Examiner</b> Farhad Ali	<b>Art Unit</b> 2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/18/2004</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-18 are rejected under 35 U.S.C. 101 because a computer program and a computer program code are non-statutory subject matter.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu (US 5185860 A).

### **Claim 1**

Wu teaches a name resolution device for managing a name of each node connected to a network and an address for identifying each node, comprising:

a node information storing unit configured to store a node information containing a name of a node, a network identification information, a prefix indicating a position on

the network, and an interface identification information of a node, for each node (Column 5 Lines 58-60, "Block 604 then initializes the database used to permanently store the nodes);

a node information collecting unit configured to collect the node information of other nodes connected to the network, through the network (Column 5 Lines 35-41, "Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed");

and a node information updating unit configured to update the node information stored in the node information storing unit, according to the node information of the other nodes collected by the node information collecting unit, by updating the prefix stored in the node information storing unit by using the interface identification information contained in the node information collected by the node information collecting unit as a key (Column 8 Lines 16-19, "After adding the node, or if the node already existed, control goes to block 1112 which updates the state information about the node").

## **Claim 2**

Wu teaches the name resolution device of claim 1, wherein the node information updating unit updates the node information stored in the node information storing unit for which the interface identification information coincides with that of the node

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information collected by the node information collecting unit but title prefix does not coincide with that of the node information collected by the node information collecting unit (Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record").

### **Claim 3**

Wu teaches the name resolution device of claim 1, further comprising:

a function conversion unit configured to convert the interface identification information corresponding to a prescribed node among the node information stored in the node information storing unit, by using a one way function (Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list");

a comparing unit configured to compare the interface identification information converted by using the one way function which is received from another node, with the interface identification information as converted by the function conversion unit (Column 6-7 Lines 67-5, "That is, when the process-ping module queries the node, it determines the state of the node at the present time. This state is compared, in block 806, with the

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state of the node as it was known previously in the database. If that state has changed, block 806 transfers to block 808 to store the new state in the database”);

and a node information providing unit configured to provide the prefix corresponding to the interface identification information compared by the comparing unit to the another node, only when it is judged that the interface identification information coincides at the comparing unit (Column 6 Lines 48-52, “query the address translation table for the node that is executing the discovery system. This table will contain the addresses of other nodes on the network, and these addresses are then used to start the discovery process”).

#### **Claim 4**

Wu teaches the name resolution device of claim 3, wherein the function conversion unit uses a hash function as the one way function (Column 9 Lines 5-7, “Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list”).

#### **Claim 5**

Wu teaches the name resolution device of claim 1, farther comprising:  
a prefix conversion unit configured to convert the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the node information storing unit stores the position identification information obtained by the prefix conversion unit, as the prefix (Column 9 Lines 7-11, “Block 1504 then

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allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address”).

**Claim 6**

Wu teaches the name resolution device of claim 1, further comprising:

an address generation unit configured to generate an IPv6 address dynamically, according to the node information stored in the node information storing unit (Column 10 Lines 40-43, “FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses”).

**Claim 7**

Wu teaches a name resolution method for managing a name of each node connected to a network and an address for identifying each node, comprising:

storing a node information containing a name of a node, a network identification information, a prefix indicating a position on the network, and an interface identification information of a node, for each node (Column 5 Lines 58-60, “Block 604 then initializes the database used to permanently store the nodes);

collecting the node information of other nodes connected to the network, through the network (Column 5 Lines 35-41, “Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to

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start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed”);

and updating the node information stored by the storing step, according to the node information of the other nodes collected by the collecting step, by updating the prefix stored by storing step by using the interface identification information contained in the node information collected by the collecting step as a key (Column 8 Lines 16-19, “After adding the node, or if the node already existed, control goes to block 1112 which updates the state information about the node”).

#### **Claim 8**

Wu teaches the name resolution method of claim 7, wherein the updating step updates the node information stored by the storing step for which the interface identification information coincides with that of the node information collected by the collecting step but the prefix does not coincide with that of the node information collected by the collecting step (Column 8 Lines 25-32, “each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record”).

#### **Claim 9**



Wu teaches the name resolution method of claim 7, further comprising:

converting the interface identification information corresponding to a prescribed node among the node information stored by the storing step, by using a one way function (Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list");

comparing the interface identification information converted by using the one way function which is received from another node, with the interface identification information as converted by the converting step (Column 6-7 Lines 67-5, "That is, when the process-ping module queries the node, it determines the state of the node at the present time. This state is compared, in block 806, with the state of the node as it was known previously in the database. If that state has changed, block 806 transfers to block 808 to store the new state in the database");

and providing the prefix corresponding to the interface identification information compared by the comparing step to the another node, only when it is judged that the interface identification information coincides at the comparing step (Column 6 Lines 48-52, "query the address translation table for the node that is executing the discovery system. This table will contain the addresses of other nodes on the network, and these addresses are then used to start the discovery process").

#### **Claim 10**

Wu teaches the name resolution method of claim 9, wherein the converting step uses a hash function as the one way function (Column 9 Lines 5-7, "Referring now to

FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list”).

**Claim 11**

Wu teaches the name resolution method of claim 7, further comprising:  
converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing step stores the position identification information obtained by the converting step, as the prefix (Column 9 Lines 7-11, “Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address”).

**Claim 12**

Wu teaches the name resolution method of claim 7, further comprising:  
generating an IPv6 address dynamically, according to the node information stored by the storing step (Column 10 Lines 40-43, “FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses”).

**Claim 13**

Wu teaches a computer program product for causing a computer to function as a name resolution device for managing a name of each node connected to a network and an address for identifying each node, the computer program product comprising:

a first computer program code for causing the computer to store a node information containing a name of a node, a network identification information, a prefix indicating a position on the network, and an interface identification information of a node, for each node (Column 5 Lines 58-60, "Block 604 then initializes the database used to permanently store the nodes);

a second computer program code for causing the computer to collect the node information of other nodes connected to the network, through the network (Column 5 Lines 35-41, "Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed");

and a third computer program code for causing the computer to update the node information stored in the first computer program code, according to the node information of the other nodes collected by the second computer program code, by updating the prefix stored in the first computer program code by using the interface identification information contained in the node information collected by the second computer program code as a key (Column 8 Lines 16-19, "After adding the node, or if the node already existed, control goes to block 1112 which updates the state information about the node").

**Claim 14**

Wu teaches the computer program product of claim 13, wherein the third computer program code updates the node information stored in the first computer program code for which the interface identification information coincides with that of the node information collected by the second computer program code but the prefix does not coincide with that of the node information collected by the second computer program code (Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record").

**Claim 15**

Wu teaches the computer program product of claim 13, further comprising:  
a fourth computer program code for causing the computer to convert the interface identification information corresponding to a prescribed node among the node information stored in the first computer program code, by using a one way function (Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list");

a fifth computer program code for causing the computer to compare the interface identification information converted by using the one way function which is received from another node, with the interface identification information as converted by the fourth computer program code (Column 6-7 Lines 67-5, "That is, when the process-ping module queries the node, it determines the state of the node at the present time. This state is compared, in block 806, with the state of the node as it was known previously in the database. If that state has changed, block 806 transfers to block 808 to store the new state in the database");

and a sixth computer program code for causing the computer to provide the prefix corresponding to the interface identification information compared by the fifth computer program code to the another node, only when it is judged that the interface identification information coincides at the fifth computer program code (Column 6 Lines 48-52, "query the address translation table for the node that is executing the discovery system. This table will contain the addresses of other nodes on the network, and these addresses are then used to start the discovery process").

#### **Claim 16**

Wu teaches the computer program product of claim 15, wherein the fourth computer program code uses a hash function as the one way function (Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list").

**Claim 17**

Wu teaches the computer program product of claim 13, further comprising:  
a fourth computer program code for causing the computer to convert the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the first computer program code stores the position identification information obtained by the fourth computer program code, as the prefix (Column 9 Lines 7-11, "Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address").

**Claim 18**

Wu teaches the computer program code of claim 13, further comprising:  
a fourth computer program code for causing the computer to generate an IPv6 address dynamically, according to the node information stored in the first computer program code (Column 10 Lines 40-43, "FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses").

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhad Ali whose telephone number is (571) 270-1920. The examiner can normally be reached on Monday thru Friday, 7:30am to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey C. Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

F.A.



JEFFREY PWU  
SUPERVISORY PATENT EXAMINER